

RULES OF CONSUMPTION AND CLIMATE CHANGE

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ABSTRACT

World leaders have met in Paris to agree on a global agenda for tackling climate change. The food lost near the farm or wasted near the fork has a lot to do with climate change. The impact of climate change on all aspects of life has formed a large part of environmental studies since time immemorial. Around a third of all food produced for human consumption is lost or wasted. To put this in perspective, if food loss and waste were its own country, it would be the world's third-largest emitter—surpassed only by China and the United States. In fact, food loss and waste generates more than four times as much annual greenhouse gas emissions as aviation, and is comparable to emissions from road transport. In short, it's a big deal. The food wastage in India cannot be done away with only by imposition of harsh penalties but by increasing mass awareness about the ill-effects of the same on the climate. On the production side, there is an urgent necessity to develop our storage and transportation facilities so that agricultural yield does not rot. Food wastage is an affront to the right to a healthy environment which is premised on the right to live a life of dignity. Hence, as a respect for both these rights, food wastage needs to be curbed at the earliest.

KEYWORDS: Food Wastage, Food Loss, Food Waste, Climate Change, Greenhouse Gas (GHG) Emissions, Production, Consumption, Policy Initiatives & Awareness Campaigns

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INTRODUCTION

When I give food to the poor, they call me a saint. When I ask why the poor have no food, they call me a communist.

— HélderCâmara, Dom HelderCamara: Essential Writings

India is not truly one nation. In fact, there are two extremely diverse nations in one geographical confinement – one of the rich, about 5 per cent, which in our country translates to over 6 crore people and the other 95 per cent of the poor and the abjectly poor. These figures explain the composition of our economy. In fact these 'two' Indias are not unrelated; in fact they are mutually responsible for the status of each other. The whole exercise of counting the poor is, in fact, eyewash to hide the real issue of extreme inequality which has been increasing exponentially since the economic reforms.¹

A high percentage of food is being wasted at various stages of the food supply chain, adding not just to the number of hungry poor but also to our environmental woes. The greenhouse gas emissions associated with food loss and waste come from a variety of sources, including on-farm agriculture emissions—including from the digestive systems of cows, manure from livestock, on-farm energy use and fertilizer emissions—for producing

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¹ <http://www.livemint.com/Opinion/11gVncveq4EYEn2uzX4FL/Nearly-half-of-Indians-survived-on-less-than-Rs38-a-day-in-2.html> (back).

food that is ultimately lost or wasted; the production of electricity and heat used to manufacture and process the food that is ultimately lost or wasted; the energy used to transport, store and cook food that is ultimately lost or wasted; the landfill emissions from decaying food; and the emissions from land use change and deforestation associated with producing food that is ultimately lost or wasted.² Food loss and waste impacts not only climate, but also personal and national economics. Globally, the FAO estimates that food worth about \$940 billion is lost or wasted each year throughout the entire food supply chain. India government is currently working on the National Food Processing Policy to reduce wastage of perishables and improve the supply situation.

India is the second largest producer of fruits and cereals, third in marine production and has the largest livestock in the world, but still the country is able to process only 2 per cent. "There should be zero tolerance towards waste. Currently, about Rs 44,000 crore worth food is being wasted and unless we work towards removing that, our growth story cannot be completed. The cold chain capacity of the country is 30 million tonnes, whereas it produces around 200 million metric tonne of products," said Food Processing Minister Harsimrat Kaur Badal speaking at the National Cold Chain Summit organized by CII jointly with Ministry of Food Processing Industries and Ministry of Agriculture and National Centre for Cold Chain Development (NCCD). She also said "The biggest challenge the industry faces is power, without which the cold chain cannot be successful. States need to invest in renewable energy and provide solar energy at subsidized rates."³

Reducing food loss and waste could help avoid these economic losses and reduce financial burdens, particularly on the world's most vulnerable people. The World Bank estimates that just a 1 percent reduction in post-harvest losses could lead to economic gains of \$40 million each year. And out of that \$40 million, most of the benefits would go directly to the smallholder farmers growing the food. The United Kingdom (U.K.) government has estimated recently that of all food grown worldwide, almost 30% is wasted even before it reaches the end consumer⁴.

There is a very evident and obvious connection between food wastage and climate change. When food meant for consumption is wasted, the excess food needs to be disposed of somehow. If the same is disposed of in a landfill, it decomposes and is a significant source of methane gas, which is twenty times more effective at trapping heat in the atmosphere than carbon dioxide. Moreover, wasted food amounts to wasted energy. The calories in wasted food are never consumed, and the energy supplied into growing that food, processing and packaging it to the consumer is also wasted. Apart from being a source of energy, food is also a consumer of fossil energy in its production, transportation and preparation and if statistics are to be believed, each year food waste represents the energy equivalent of 350 million barrels of oil, enough to power the country for a whole week.⁵ A report by the California Environmental Associates titled 'Strategies for Mitigating Climate Change in Agriculture: Recommendations for Philanthropy' published in April 2014 has estimated that release of nearly 3 giga tonnes of carbon dioxide (CO₂) equivalents per year can be mitigated through

² <http://www.wri.org/blog/2015/12/whats-food-loss-and-waste-got-to-do-climate-change-lot-actually>

³ <http://pib.nic.in/newsite/PrintRelease.aspx?relid=158883>, Press Information Bureau, Government of India, Ministry of Food Processing Industries, Food Processing Policy and World Food India 2017, 06-March-2017 20:39 IST

⁴ U.K. Government Office for Science, *The Future of Food and Farming: Challenges and Choices for Global Sustainability* (BIS/11/546, January 2011).

⁵ Amanda D. Cuéllar and Michael E. Webber, 'Waste Food, Wasted Energy: The Embedded Energy in Food Waste in the United States', (2010) 44 ENVIRONMENT SCIENCE TECHNOLOGY 6464.

changes in diets and reductions in food wastage by 2030 and 25% of this mitigation potential comes from reduction in food wastage and losses.⁶

It is important to understand some important concepts taken from “Food Wastage Footprint-Impacts on Natural Resources” titled by the Food and Agricultural Association (FAO)⁷. Firstly, it is of utmost importance to know what a food supply chain means. A food supply chain or a food system refers to the processes that describe how food from a farm ends up on our plate.⁸ The supply chain encompasses all processes meanwhile, such as production, processing, distribution, consumption and disposal. A food supply chain can be best explained as domino-like where each process is so intricately linked to the other that an adverse effect on one is bound to affect the other. Food moves from producer to consumer through the process of production, processing, distribution, retailing and consumption and, at the same time, money that consumers pay for food moves from consumers to producers in the reverse process. This is how the two-sided process connects the farmers and the consumers. It is well-accepted that all the processes of the food supply chain have important environmental externalities because of the usage of energy and natural resources and associated greenhouse gas emissions. Thus, food wastage occurring at any stage has adverse effects for the entire food supply chain. Secondly, we need to acquaint ourselves with what is meant by food loss. Food loss refers to the decrease in the nutritional value of food caused due to inefficiencies in food supply chains such as poor infrastructure, lack of technology, insufficient skills, knowledge and management, natural disasters, and the likes. Thirdly, food waste refers to food appropriate for human consumption being discarded due to reasons like oversupply or individual consumer habits, shopping and eating habits. The fourth, and most important, concept is that of food wastage which refers to food lost by deterioration or waste. The term ‘wastage’ encompasses both food loss as well as food waste. Hence, hereinafter, whenever the term food wastage is referred to, it shall invoke the concepts of both food loss as well as food waste.

This understanding of food waste and its connection to climate change came about during the time I was teaching an elective course to LLM students. I thank all my students, especially Ritwika for working closely with me and providing essential inputs through her research.

Food Loss-Impacts

The French National Assembly passed a law that makes it illegal for supermarkets to destroy edible food and requires them to establish processes for food recovery with food banks. The legislation will also introduce food waste prevention as a topic in schools. And this fall, the U.S. Department of Agriculture and U.S. Environmental Protection Agency set the nation’s first-ever food waste goal, a 50 percent reduction by 2030. Reducing food loss and waste is thus an example of what’s good for climate being good for the economy. It’s one of those “win-win” strategies everyone has been looking for in Paris.

So governments should not overlook this as an effective strategy to reduce emissions. Plus, pursuing food loss and waste reduction will help countries meet Target 12.3 of the Sustainable Development Goals – the one calling for halving food waste by 2030 – that were adopted in September, 2015 at the United Nations. The private sector has a role, too.

⁶ A. Dickie, ‘Strategies for Mitigating Climate Change in Agriculture: Recommendations for Philanthropy’ (*California Environmental Associates*, April 2014) <<http://www.climateandlandusealliance.org/uploads/PDFs/Abridged-Full-Report-Strategies-For-Mitigating-Climate-Change-In-Agriculture.pdf>> accessed 28 April 2014.

⁷ Food and Agriculture Organization, ‘Food Wastage Footprint: Impacts on Natural Resources’ (2013) (*FAO Corporate Document Repository*) <www.fao.org/docrep/018/i3347e/i3347e.pdf> accessed 22 March 2014.

⁸ Harvard School of Public Health, ‘Lesson 4: What is the Food Supply Chain?’ (*Centre for Health and the Global Environment*) <chge.med.harvard.edu/sites/default/files/lesson-plan-files/lesson_4.pdf> accessed 28 April 2014.

Companies should resolve to reduce food waste. And let's not forget households. We all can play a part, starting with reducing the amount of food that ends up in our rubbish bins. Much like solving climate change, there's something for everyone to do when it comes to reducing food loss and waste.⁹

Food wastage arises at all stages of the food supply chains for a variety of reasons that are very much dependent on the local conditions within each country. At a global level, a pattern is clearly visible; in high income regions, volumes of wasted food are higher in the processing, distribution and consumption stages, whereas in low-income countries, food losses occur in the production and post-harvesting phases. In low income countries, the lack of infrastructure and lack of knowledge on proper storage and food handling, combined with unfavourable climatic conditions, favour food spoilage. In higher income countries, aesthetic preferences and arbitrary sell-by dates are factors that contribute to food waste.

The 2011 FAO assessment of global food losses and waste estimated that each year, one-third of all food produced in the world for human consumption never reached the consumer's table. This not only means a missed opportunity for the economy and food security, but also a waste of all the natural resources used for growing, processing, packaging, transporting and marketing food.

Global food loss and waste generate annually 4.4 GtCO₂ eq, or about 8% of total anthropogenic GHG emissions¹⁰. This means that the contribution of food wastage emissions to global warming is almost equivalent (87%) to global road transport emissions¹¹.

The highest carbon footprint of wastage occurs at the consumption phase, 37% of total, whereas consumption only accounts for 22% of total food wastage. This is because one kilogram of food that is wasted further along the supply chain will have a higher carbon intensity than at earlier stages.

What is more intriguing is that patterns of food wastage vary across different parts of the world. So while production losses occur most in developing countries, consumption losses are more evident in high and middle income countries. United Nations Sustainable Development Goal 12 (SDG 12) on "Ensuring sustainable consumption and production patterns" includes a specific food waste reduction target: "by 2030, to halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses". The SDG 12 target of 50% food waste reduction is hereby combined with assumptions on feasible food loss reduction ratios, for each commodity group, in order to calculate a possible scenario.¹²

Food Waste Footprint-Impacts on Natural Resources report by FAO¹³ identifies four 'footprints' or adverse effects of the same¹⁴. Based on the report, food wastage renders¹⁵:

1. Carbon footprint;
2. Water footprint;

⁹ *What's Food Loss and Waste Got to Do with Climate Change? A Lot, Actually* by Craig Hanson, Brian Lipinski, Johannes Friedrich, Clementine O'Connor and Keith James - December 11, 2015

¹⁰ EC, JRC/PBL, 2012 Emission Database for Global Atmospheric Research, version 4.2.

¹¹ IPCC, 2014 Fifth Assessment Report. Chapter 8: Transportation.

¹² <http://www.fao.org/3/a-bb144e.pdf>

¹³ <http://www.fao.org/docrep/018/i3347e/i3347e.pdf>

¹⁴ Food and Agriculture Organization, 'Food Waste Footprint: Impacts on Natural Resources' (2013) (*FAO Corporate Document Repository*) <www.fao.org/docrep/018/i3347e/i3347e.pdf> accessed 22 March 2014.

¹⁵ Ritwika Sharma, *THE FOOD WASTAGE AND CLIMATE CHANGE CONUNDRUM* (UNPUBLISHED).

3. Land occupation/degradation impact, and
4. Potential biodiversity impact.

The report explains a product's carbon footprint as the total amount of greenhouse gases it emits throughout its life cycle, which includes the emissions during the agricultural phase. Apart from CO₂, this also includes gases such as CH₄ (methane) and N₂O (nitrous oxide) which are non-energy related emissions from soils and livestock. The water footprint addresses the issue of water consumption. Consumptive water use refers to water that is no longer available for the immediate water environment for the reason that it has been transpired by plants, incorporated into products during the manufacturing process or consumed by people or livestock. In other words, the same quantity of water cannot be now used for any other purpose. The use of water in agriculture for producing food stuffs which are ultimately wasted has severe environmental impacts such as water depletion, salinization, water-logging and soil degradation. This is further substantiated by the fact that agriculture is the largest consumer of freshwater and accounts for nearly 70% of freshwater withdrawals from rivers, lakes and aquifers.¹⁶

The land occupation aspect is closely linked to the fact that land is a resource with limited availability but with various competing uses. It addresses the problem of occupation of land for agricultural uses which can lead to a temporary or permanent lowering of the productive capacity of land. The United Nations Organization (UNO) recognizes this phenomenon, called land degradation, as a global development and environmental issue. The combined pressures of agricultural production and grazing by livestock deplete the land of its nutrients and the fertility of the soil is largely decreased.¹⁷ While expounding upon the biodiversity impact, the report concentrates upon the agricultural production phase of food wastage for natural habitats of biodiversity are damaged more during the production phase than due to the impact of disposal of unused parts of food. Though evidence of direct effects of food loss and food wastage on biodiversity is less, the impact on land is what has a bearing on biodiversity as well. Farming, which includes conversion of wild lands and intensification, is a major threat for biodiversity worldwide. Thus, flora and fauna are faced with a situation where they are deprived of their natural habitats and have to locate other places to survive. Where they are unable to find alternate habitats, they find themselves in the category of endangered species.

Food Wastage in India

As mentioned earlier Food wastage is fast assuming serious dimensions. According to the Food and Agriculture Organisation (FAO), a staggering 1.3 billion tonnes of food is being wasted annually. The FAO report further states that one-third of the total global food production is wasted, costing the world economy about \$750 billion or Rs. 47 lakh crore. This alarming increase in food wastage is generating nearly 3.3 billion tonnes of greenhouse gas emissions, thereby severely impacting the environment. The wastage of rice in particular, has serious ramifications for the environment as decaying rice releases methane, a potent global warming gas.

A recent study conducted by Indian Institute of Management, Kolkata, revealed that only 10 per cent of foods get cold storage facility in India, this factor, accompanied by inappropriate supply chain management, has resulted in India becoming a significant contributor towards food wastage both at pre and post-harvest waste in cereals, pulses, fruits and

¹⁶ United Nations Educational, Social and Cultural Organisation (UNESCO), 'Facts and Figures: Agriculture is the Largest Consumer of Water' (*World Water Assessment Programme*) <<http://www.unesco.org/new/en/natural-sciences/environment/water/wwap/facts-and-figures/all-facts-wwdr3/fact2-agricultural-use/>> accessed 20 April 2014.

¹⁷ World Health Organization (WHO), 'Land Degradation and Desertification' (*Programme: Climate Change and Human Health*) <<http://www.who.int/globalchange/ecosystems/desert/en/>> accessed 20 April 2014.

vegetables. India ranks 63 among 88 countries in Global Hunger Index with 20 crore Indians sleeping hungry on any given night, but in spite of this, nearly 21 million tonnes of wheat are wasted in India each year instead of reaching the needy.¹⁸

The Government has made many efforts to rein in food wastage but clearly, the depth of the problem is such that the impact of these efforts is hardly up to the mark. In order to make progress in reducing the burden of this problem, the Government needs to primarily contain the excessive wastage in transportation and improve storage facilities that are currently 50 per cent less than required. Besides this, the Government must also focus on food processing technologies that are both advanced and affordable so that practices can be encouraged thereby saving food from wastage.

India should also take a cue from global practices that are both unorthodox and innovative in order to tackle food wastage problem. For instance, France has passed unanimous legislation food preservation requiring supermarkets to either give unsold food to charity or send it to farmers for use as feed and fertiliser. Similarly, institutions in Canada are recovering unused and unspoiled food from retailers, manufacturers, restaurants and caterers and sending them to charities, in the process delivering ingredients for over 22,000 meals daily. These powerful initiatives have made a big difference in how these countries have approached a vexing issue.

India can effectively use technology to script a new chapter in prevention of food wastage. The Government can speed up research in Nano technology with the help of which eco-friendly and healthy food preservation applications can be invented that are helpful in preserving food for longer duration and keeping farm produce fresh. In addition to these efforts, the Government must make it mandatory for the food retailers across the country to adopt technology standards that allow incentives for the customer to purchase perishable products that are approaching their expiration dates. This will help reduce food wastage, maximises grocery retailer revenue, and effectively reduces the global carbon footprint.

The World Economic Forum warns that food shortages represent one of the biggest risks to global stability over the next decade as countries are increasingly affected by climate change. Even though the world produces enough food to feed twice the world's present population, food wastage is ironically behind the billions of people who are malnourished. It is time to recognise this colossal scale of waste and take appropriate action that not only benefits humanity but the environment as well.

According to a report by the Food and Agricultural Organisation of the United Nations, every third malnourished child is Indian. Yet, tons of food is wasted every day. When a team of 10 professors from the University of Agricultural Sciences (UAS), Bangalore, surveyed 75 of Bangalore's wedding halls over six months, they recorded a wastage of over 943 tonnes of good quality food ie enough food to feed 2.6 crore people a regular Indian meal.¹⁹ No doubt weddings and banquets are a huge source of food wastage, but restaurants and hotels also contribute to food wastage, though the awareness around this has grown in the last five years. While some restaurants in India employ food controllers to check food spoilage, others donate it to their staff and other personnel, and smaller standalone restaurants, donate it to orphanages. Few also reuse non-perishable food.

Of late, a private member bill named Marriages (Compulsory Registration and Prevention of Wasteful Expenditure) Bill, 2016 is seeking to put a cap on wedding expenditure. The bill seems to be focusing on cutting expenditure rather than food waste. One can only hope for the inclusion of food waste control at weddings as well. In a

¹⁸ <http://www.developmentnews.in/tackling-food-wastage-india/>

¹⁹ www.youthkiawaaz.com/2017/03/what-you-can-do-about-food-wastage-in-india/

country with only 14 private member bills becoming laws to its credit, it is to be seen if the bill makes its way through. Governments worldwide are taking laudable and easily adaptable initiatives.

Effective Policies Food Waste Reduction

Small but concentrated efforts against food waste are the need of the hour. Worldwide one-ninth of the global population face hunger. Italy adopted a law that earmarked approximately \$10 million to reduce one million tonnes of wasted food a year by offering incentives to businesses who donate food to charities, including \$1.8 million annually to fund innovative food waste reduction projects, as well as \$2.5 million to buy food for the poor. Assessing food loss and waste and developing effective policies along the value chain can help solve the food waste problem and thus contribute towards food security and sustainability. Wasting food going forward would tantamount to wasting a secure future.

The following solutions can be envisaged for solving India's food waste problem. Prevention solutions would include promotion of resource efficient and regenerative agricultural practices - precision and organic agriculture; improved access to low-cost handling and storage technologies i.e., evaporative coolers, metal silos. Real time wireless sensors can monitor the storage conditions of perishable food as it is transported, and transmit this data to clients to alert them if things are going wrong. Mega food parks are being commissioned in India to increase the processing of perishables.

Other solutions include using active intelligent packaging for perishables; optimizing food packaging; tapping businesses that buy unwanted food/produce directly from distributor/manufacture for discounted retail sale; expansion of secondary markets for items with cosmetic damage; tray-less dining, encouraging sale of off-grade produce. Technology would be central to addressing food waste; but the ultimate success will depend on our readiness to change attitudes of stakeholders along the value chain.

Approximately, a fifth of food at social events goes waste. Many city-based organizations are tackling this issue along with hunger. Some of these organizations collect excess food from parties and distribute it in slum areas called recovery solutions. Some businesses are involved in value added processing, making healthy fruit snacks from surplus produce or donated food. Mobile apps are being developed for crowdsourcing data on hunger spots and which take requests for donation of excess food. Various community level initiatives like gleaning networks, food banks and social supermarkets can help in redistributing food to 184 million undernourished Indians in need; thus helping fight poverty.²⁰

Moral Concerns of Overconsumption and Waste of Food

The moral concern is with the waste. Throwing away food and wasting it seems to be wrong, especially when people are starving. Some say less wasted food would surely make more food available to those in need. But less wastage need not necessarily make more food available to the needy. Actually, people go hungry not because people are wasting food and thus making it unavailable, but because they cannot afford the food they need. It is true that as population grows such waste will matter. This is possible if and only if food becomes scarce.

But in our economy, some businesses profit from the waste. If people do not buy more and consume more than less sales will impact economy where profits will be less and will in turn reduce employment. This is more of a utilitarian argument where less waste is more harm.

²⁰ <http://www.thehindubusinessline.com/opinion/problem-of-food-wastage-in-india/article9285737.ece>

Therefore, some say “We have the right food system, just the wrong consumers.” The food system needs firm and clear frameworks and goals, and not just a focus on one aspect - waste - as though it can be separated from the rest.

The environmental cost of producing all that food, for nothing, is staggering. Reducing food waste around the world would help curb emissions of planet-warming gases, lessening some of the impacts of climate change such as more extreme weather and rising seas, say scientists. It is believed that agriculture is a major driver of climate change, accounting for more than 20% of overall global greenhouse gas emissions. The share of food wasted is expected to increase drastically if emerging economies like China and India adopt western food habits, including a shift to eating more meat, the researchers warned.²¹

The moral argument against wastage of food should be carved out of the fact that about one-sixth of the world population suffers from chronic hunger not because of problems of supply but because a significant amount of food is simply wasted. In India, it is ironic that on the one hand, we talk of not dishonouring food while on the other, we indulge in rampant wastage of the same food. India wastes about Rupees 440 billion worth of fruits, vegetables and grains every year. In India, the challenge of feeding the population is not so much about agricultural production but more about getting the food to the people. Not just climate change but food wastage also contributes to the rise in food prices, as is evident by the fact that waste is responsible for 50% of the current cost of milk in India²². Quite befittingly, the House of Lords EU Agriculture, Fisheries, Environment and Energy Sub-Committee called the waste of millions of tonnes of food in the EU as “morally repugnant” when they observed that 15 million tonnes of food in the UK and at least 90 million tonnes in the EU is dumped or wasted across the year.²³ The Committee also expressed its abhorrence at the “buy one get one free” offers for they contribute people to buy more irrespective of their consumptive capacity. Such view adopted by the Committee shows that they detest the profit-driven mindset of the retailers who urge people to buy more undeterred by the fact that the food may ultimately end up in the dustbin.

But there are ways to mitigate this loss and revert damage to climate. There are abundant opportunities to prevent food waste at every phase, including standardized date labeling, consumer education, produce specifications, manufacturing line optimization, cold chain management, embracing “ugly” produce, waste tracking and packaging innovations technologies.

Innovative solutions for food waste recovery can divert food to higher value uses including feeding hungry people, animals, industrial fuel conversion and energy recovery, and more, thereby reducing the need for additional food and feed.²⁴

The FAO report also observes that morality compels us to simply not allow one-third of all the food that we produce to go waste when nearly 870 million people go hungry every day.²⁵ We owe a duty to the environment as well as our fellow human beings who we are, albeit unintentionally, depriving of food that they deserve but cannot obtain due to non-availability of basic resources. The sheer ignorance through which food lies ignored and rotten due to inadequate

²¹ www.theguardian.com/environment/2016/apr/07/reducing-food-waste-would-mitigate-climate-change-study-shows.

²² HasanMulani, ‘Cold storages: Investments in basic infrastructure needed’ (*Food and Beverage News*, 1 November 2012) <<http://www.fnbnews.com/article/detnews.asp?articleid=32871§ionid=32>> accessed 27 April 2014.

²³ Harriet Denny, ‘MPs accuse supermarkets of ‘morally repugnant’ food waste’ (*The Telegraph*, 6 April 2014) <<http://www.telegraph.co.uk/finance/newsbysector/retailandconsumer/10748455/MPs-accuse-supermarkets-of-morally-repugnant-food-waste.html>> accessed 27 April 2014.

²⁴ http://www.climatecollaborative.com/food_waste

²⁵ <http://www.indiacsr.in/en/?p=12197>

storage and the lack of morality in the profligacy with which we waste food shows an inherent lack of basic virtues in those who can afford to consume/buy food. In fact, many people consider food wastage to be a moral issue till the time it remains edible and can be redistributed to those who are in need of the same. In fact, the proposed legislation in the UK calls for a legal obligation on the large food waste producers (like supermarkets) to donate surplus edible food to charity. This shows a strong undercurrent of morality in the argument against food wastage.²⁶

The moral argument by quoting Pope Francis, he says:

*“Consumerism has led us to become used to an excess and daily waste of food, to which, at times, we are no longer able to give a just value, which goes well beyond mere economic parameters. We should all remember, however, that the food we throw away is stolen from the table of the poor, the hungry! I encourage everyone to reflect on the problem of thrown away and wasted food, to identify ways and means that, by seriously addressing this issue, are a vehicle of solidarity and sharing with the needy.”*²⁷

So, What’s the Solution?

Here’s what one can do on a more personal level to contain the food wastage:

Plan out your meal and make your shopping list to determine what you actually need for the week. About 20% of what we buy in urban India ends up being thrown away. Buy in quantities you can realistically use. Avoid impulse buys. It will more or less find the bin. If you cook at home, make sure you cook keeping in mind there is no excess. You can always complete your meals with a few fruits rather than keep some extra food in the refrigerator. It’s a lot better and a healthier practice too. Select according to their shelf life. Use the green vegetables first. Don’t throw out fruits and veggies with ‘aesthetic only’ blemishes. Use canned and bottled food before expiry dates. Reuse the refrigerated left-overs for the very next meal. Even if food gets spoilt then compost it. If you work in an office that has a canteen, check with them on how they manage excess food. Cooked food, especially since it has a low shelf life needs to be managed better and faster. Check with NGOs who offer to transport excess food to the needy. If you host a family get together either at home, a marriage hall or throw a party at a hotel, make sure you plan for the food to be transported to a place like an orphanage or an old age shelter. Make finishing your plate a habit. Try to inculcate it further to as many possible.²⁸

To address the problem of food loss and waste globally, the Sustainable Development Goal (SDG) 12.3 aims to halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses. To achieve the SDG target indicator, a number of steps are being taken globally by FAO and associated organisations. FAO is working on the Global Food Loss Index, which aims to account for losses occurring on-farm, during transportation, storage and processing. Accurate measurement of food loss will to create awareness and provide impetus for policy steps and actions to counter the difference.

²⁶ INDIACSR News Network, ‘Food Waste Harms Climate, Water, Land and Biodiversity – New FAO Report’ (*India Corporate Sustainability and Responsibility*, 11 September 2013) <<http://www.edie.net/news/5/ANALYSIS-Bringing-the-food-waste-debate-to-the-boil/22073/>> accessed 28 April 2014.

²⁷ ‘Pope Francis on World Environment Day speaks of Food Waste, Lack of Attention to Needs of Poor’ (*The Huffington Post*, 6 May 2013) <http://www.huffingtonpost.com/2013/06/05/pope-francis-world-environment-day_n_3390299.html> accessed 28 April 2014.

²⁸ <http://thecsrjournal.in/food-wastage-in-india-a-serious-concern/>

The study indicated a need for capacity building at different levels of value chain actors. It also called for investment in large storage facilities and other related infrastructure such as roads and electricity to ensure reduction in food loss and waste. This can eventually lead to enhanced food security in the country as well as globally.²⁹

The NDA government is preparing to fix portion sizes of dishes served by hotels and restaurants, as a measure to curb food wastage. Instead India must adopt best practices around the world.³⁰ Best practices around the world: France has the strictest laws regarding food wastage at the retail-level. On February 4, 2016, the French national assembly unanimously voted to ban supermarkets from throwing unsold food that had not spoiled. The law stipulates that supermarkets must donate edible, unsold food to charities. Retailers in France now redistribute almost 100,000 tonnes to charity.

The Bill Emerson Good Samaritan Food Donation Act, signed into law by Bill Clinton, encourages restaurants and supermarkets to donate food to non-profits by minimising the donor's liability. The act eases the process of donating unspoiled, still wholesome food to charities.

UK's Environment Food and Rural Affairs Committee launched an inquiry into food waste after figures showed that a whopping 8 million tonnes of food is wasted post-manufacture in Britain. In the UK, government subsidies make it cheaper for businesses to turn food into fertiliser rather than donating to the poor. The UK Parliament is now considering a legislation to ban food waste, asking stakeholders including farmers and consumer groups to weigh in. Charity organisations such as The Real Junk Food Project have also stepped into this gap, by turning food meant for waste into meals for the poor.

In 2012, the German federal agriculture ministry started a "too good for the bin" initiative, where consumers could gain more information about when to throw away foods, and what the "best before date" (MHD) actually implied.

Some restaurants in Germany have also lead the way by asking patrons to pay extra if they do not finish the food on their plate. The rationale behind is it is to encourage people to order only how much they will eat, not how much they will throw away.

Scotland was able to reduce food wastage in restaurants through a simple solution -- offering customers branded doggy bags so they could get leftover food packed. The 'Good to Go' scheme was piloted by Zero Waste Scotland, a government-funded organisation that aims to reduce waste, and within two years, more than 100 restaurants signed up for the programme. Restaurants that have adopted the scheme also ask consumers whether they want to change portion sizes or really order the side dishes.

CONCLUSIONS

Food wastage is everyone's problem. It's not something that is just for big companies to provide a solution for, the responsibility belongs to everyone. The Indian government's proposed cap of food portions is not the only attempt by India to curb the problem. The Robin Hood Army, a volunteer based organisation that works to get surplus food from restaurants to the less fortunate sections of society, began in 2014 when a group of six friends from Delhi took to the streets with one simple aim: to feed the homeless. In one night they had driven to restaurants, collected unsold food, re-packaged it and

²⁹ <http://www.downtoearth.org.in/blog/reducing-food-waste-vital-for-india-s-food-security-57345>

³⁰ <http://www.hindustantimes.com/india-news/india-to-fix-portion-sizes-in-hotels-here-s-how-the-world-curbs-food-wastage/story-LjaunfAEUj8CCMx7HB8L8M.html>

distributed it to around 100 homeless people. With the aid of a social media campaign, the movement gained huge momentum and now boasts a 500-strong volunteer base spread out across 13 cities in India and last year saw it spread to neighbouring Pakistan.

Food wastage is an affront to the right to a healthy environment which is premised on the right to live a life of dignity. Hence, as a respect for both these rights, food wastage needs to be curbed at the earliest.

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